
Nomenclatural and Taxonomic Novelties in *Senecio* ser. *Corymbosi* (Asteraceae, Senecioneae) from Southern South America

Mariana Gabriela López, Arturo Federico Wulff, and Lidia Poggio

Laboratorio de Citogenética y Evolución, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Ciudad Universitaria, Pabellón 2, 4° piso, Int. Güiraldes 2620, 1428 Buenos Aires, Argentina; Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Avda. Rivadavia 1917, CP C1033AAJ, Ciudad de Buenos Aires, Argentina. magalo@ege.fcen.uba.ar; artulf@ege.fcen.uba.ar; poggioecitoevol@hotmail.com

Cecilia Carmen Xifreda

Comisión de Investigaciones Científicas de la Provincia de Buenos Aires (CIC-PBA), Laboratorio de Etnobotánica y Botánica Aplicada, Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata, calle 64 N° 3, 1900 La Plata, Argentina. cxifreda@fcnym.unlp.edu.ar

ABSTRACT. The new name, subseries *Alcabrerae* M. G. López, A. F. Wulff & Xifreda for *Senecio* L. ser. *Corymbosi* (Cabrera) Cabrera, is here proposed to replace *Senecio* subsect. *Amplectentes* Cabrera. Although the name *Amplectentes* was published at different subgeneric ranks within the genus *Senecio* (Asteraceae, Senecioneae), the use of the same epithet is considered homonymy according to the *International Code of Botanical Nomenclature*, Article 53.4 and Article 21, Note 1. Additionally, *S. saucensis* Cabrera, one of the five species belonging to *Senecio* subser. *Alcabrerae*, is synonymized with *S. toroanus* Cabrera, formerly assigned to *Senecio* ser. *Hualtatini* DC., and *S. toroanus* is transferred to subseries *Alcabrerae*. The micromorphology of the cypselae for both species is provided, in support of the synonymy.

RESUMEN. El nuevo nombre para la subseries *Alcabrerae* M. G. López, A. F. Wulff & Xifreda de *Senecio* L. ser. *Corymbosi* (Cabrera) Cabrera se propone aquí en reemplazo de *Senecio* subsect. *Amplectentes* Cabrera. A pesar de que el mismo nombre *Amplectentes* fue publicado en rangos subgenéricos diferentes dentro del género *Senecio* (Asteraceae, Senecioneae), el uso del mismo epíteto es considerado homonimia según el *Código Internacional de Nomenclatura Botánica*, Artículo 53.4 y Artículo 21, Nota 1. Además, *S. saucensis* Cabrera, una de las cinco especies pertenecientes a *Senecio* subser. *Alcabrerae* se sinonimiza aquí con *S. toroanus* Cabrera, originalmente tratada bajo *Senecio* ser. *Hualtatini* DC., y *S. toroanus* es aquí transferida a subser. *Alcabrerae*. Se aporta la micromorfología de las cipselas de ambas especies, reforzando la sinonimización.

Key words: Argentina, Asteraceae, Chile, *Senecio*, ser. *Corymbosi*, subser. *Amplectentes*.

Multidisciplinary studies on Asteraceae have been ongoing for several years on taxa from southern South America, mainly of Argentine origin. New research focusing on *Senecio* L. in the Senecioneae (López, 2008) has revealed the nomenclatural illegitimacy and taxonomic synonymy of representatives within *Senecio* ser. *Corymbosi* (Cabrera) Cabrera (Cabrera, 1985; Cabrera et al., 1999). The results presented here include nomenclatural and taxonomic novelties at the subserial and specific level within *Senecio* ser. *Corymbosi*.

A NEW NAME FOR *SENECIO* SUBSER. *AMPLECTENTES* WITHIN SERIES *CORYMBOSI*

The epithet *Amplectentes* denominated an infrageneric rank in the genus *Senecio* and was first used by Greenman (1902) to delimit a distinctive group of species with stems erect or ascending and leafy to the inflorescences, pubescence usually of long jointed hairs, amplexicaul stem leaves, and calyculate involucre. The name was validated by its description in the key (Greenman, 1902: 18). The epithet *Amplectentes* was published by Greenman at the rank of section and applied to 29 *Senecio* species from the United States and Mexico. The type species for the section was not designated by the author; however, in accordance with Article 22.6 of the *International Code of Botanical Nomenclature* (ICBN; McNeill et al., 2006), *S. amplectens* A. Gray (1862) is the implicit type, as the name of the section clearly derives from

the epithet of one species assigned to it. Later, Greenman (1915: 577) used the name *Amplectentes* again in a synopsis of the subgenera and sections of *Senecio* at the rank of section, in a monograph of the North and Central American species. Only 10 of 29 species considered by Greenman are currently accepted (Barkley, 2006). On the other hand, Cabrera (1949) used the same name *Amplectentes* within the genus *Senecio*, attributing this to himself, for one of seven subsectional groups pertaining to section *Corymbocephalus* Cabrera. This name was later reduced to the rank of subseries as subseries *Amplectentes* (Cabrera) Cabrera & S. E. Freire (Cabrera et al., 1999) affiliated with the series *Corymbosi* [= section *Corymbosi* Cabrera (Cabrera, 1939), with this name found to have priority over section *Corymbocephalus* (Cabrera, 1949)].

Additionally, the name *Amplectentes* was ambiguously cited in the botanical literature, sensu both Greenman (1902, 1915) and Cabrera (1949). Among others, Ornduff et al. (1967: 217, 210) postulated basic chromosome numbers for sections of *Senecio* in North America and included section *Amplectentes* Greenman with a base number of 20; today $x = 5$ is the accepted basic chromosome number for the genus (López et al., 2005, 2008). A different taxonomic view was followed by Barkley (1985: 216–217), who assigned some species previously included under section *Amplectentes* sensu Greenman to his informal group Herbacei and subgroups Triangulares and Lugentes. Section *Amplectentes* was later recognized separately again as a “group” (Barkley, 2006: 544, 546) and included 10 species. Jeffrey (1988: 85, 86) annotated both authorities differently as “sect. *Corymbosi* Cabr. subsect. *Amplectentes* Cabr.” as “perennial leafy-stemmed herbs or subshrubs; upper leaves semiamplexicaul,” and “sect. *Amplectentes* Greenm.” as “perennial subscapigerous herbs; upper leaves semiamplexicaul,” recognizing Barkley’s Triangulares and Lugentes as separate informal groups.

The infrageneric name *Amplectentes* Greenman (Greenman, 1902) has priority over *Amplectentes* Cabrera (Cabrera, 1949). Despite the fact that the same name was published at two different ranks (sectional and subsection/subseries, respectively), they are considered homonyms under the ICBN (McNeill et al., 2006: Art. 53.4, Art. 21, Note 1). Consequently, a replacement name is proposed here for subseries *Amplectentes* within *Senecio* ser. *Corymbosi*. This series was previously published at the level of section, as has been previously noted.

Senecio L. ser. **Corymbosi** (Cabrera) Cabrera, Darwiniana 26: 157. 1985. Basionym: *Senecio*

sect. *Corymbosi* Cabrera, Lilloa 5: 71. 1939. TYPE: *Senecio brasiliensis* (Spreng.) Less.

Senecio L. subser. **Alcabrerae** M. G. López, A. F. Wulff & Xifreda, nom. nov. Replaced synonym: *Senecio* subsect. *Amplectentes* Cabrera, Lilloa 15: 355. 1949, nom. illeg. non *Senecio* sect. *Amplectentes* Greenman, 1902. *Senecio* subser. *Amplectentes* (Cabrera) Cabrera & S. E. Freire, Fl. Fanerog. Argent. 62: 22. 1999. TYPE: *Senecio hieracium* J. Rémy (designated by Cabrera, 1949: 355).

Observations. Subseries *Alcabrerae* in *Senecio* sect. *Senecio* ser. *Corymbosi* has been circumscribed, recognizing five species from Chile (Cabrera, 1949) and Argentina (Cabrera et al., 1999): *S. hieracium*, *S. saucensis* Cabrera, *S. prenanthifolius* Phil., *S. nigrescens* Hook. & Arn., and *S. scopulorum* Poepp. *Senecio toroanus* Cabrera may be added to this list as a new synonym for *S. saucensis*. The synonymy with the taxonomic transfer of series is provided below.

SYNONYMY OF *SENECIO SAUCENSIS* WITH *S. TOROANUS*

Senecio ser. *Hualtatini* was described by de Candolle (1838: 417) to include robust perennial herbs, from high to giant forms with fistulose stems. The fleshy, basal leaves are largely petiolate, forming a rosette, and the upper leaves are semiamplexicaul. The majority of these characteristics are not present in *S. toroanus*, which was included in series *Hualtatini* (Cabrera et al., 1999) on the basis of the inflorescence that is a corymbiform cyme and the presence of ray florets. However, *S. toroanus* differs from other taxa in series *Hualtatini* in being only 50 cm tall, lacking both fistulose stems and fleshy leaves, not forming rosettes, having leafy stems, and having leaves that are small, thin, and irregular in shape. These features support the exclusion of this species from series *Hualtatini*.

Recent investigation of the micromorphological ornamentation of fruits of the Argentine representatives of *Senecio* ser. *Hualtatini* (López, 2005) showed that the series is defined by glabrous cypselae. *Senecio toroanus*, however, displays pubescent and papillate fruits, which further supports that the species has been placed in series *Hualtatini* erroneously. Further research by us in *Senecio* ser. *Corymbosi*, with comparison with series *Hualtatini*, reveals morphological and micromorphological similarities between *S. toroanus* and *S. saucensis*, which belongs to *Senecio* ser. *Corymbosi* subser. *Alcabrerae*. Analysis of the relevant type specimens (Fig. 1) and the evaluation of the cypselae micromorphology (Fig. 2) confirm that the names are conspecific; hence, the formal proposal is indicated below. As a

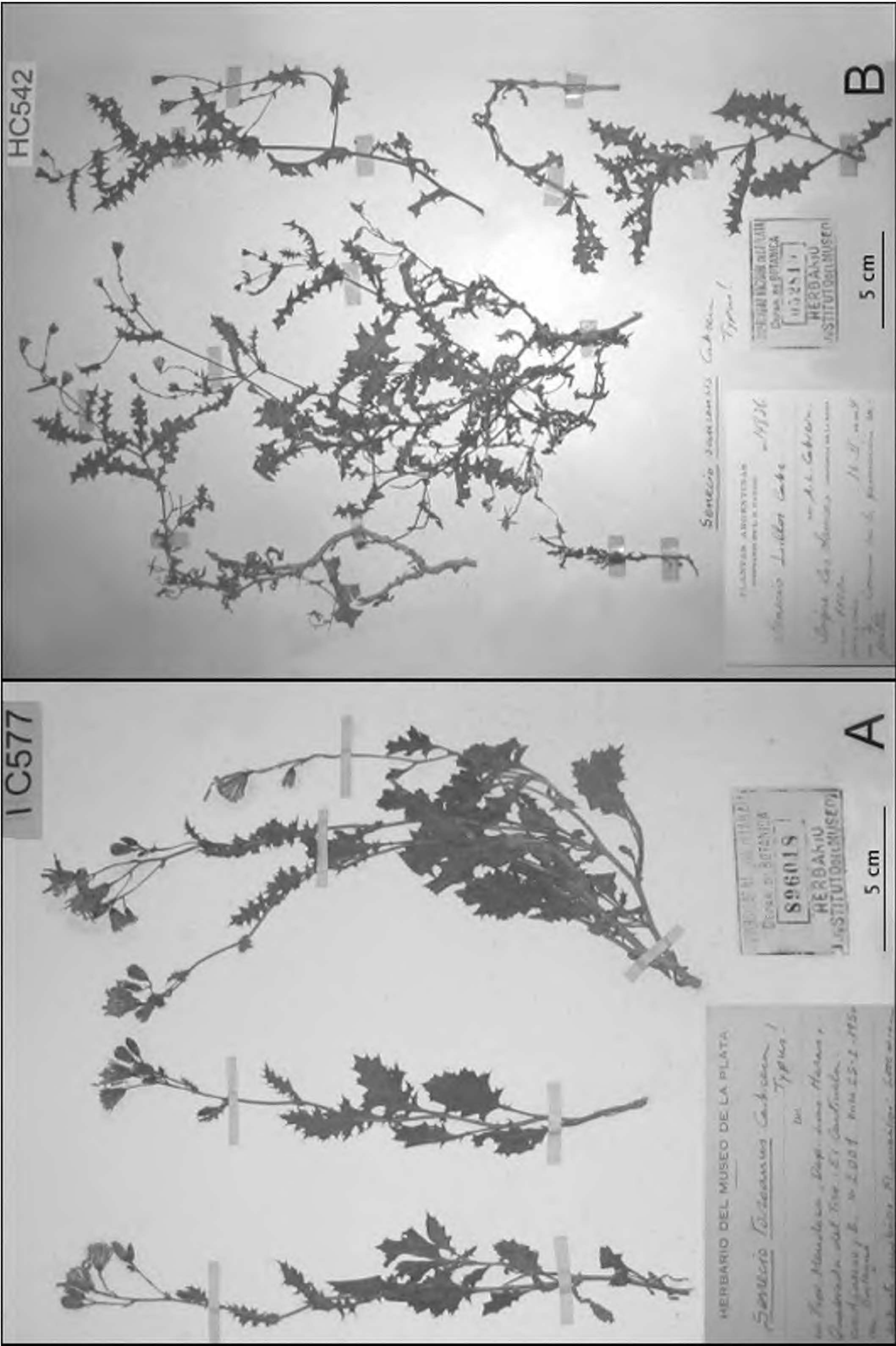


Figure 1. Type specimens. —A. *Senecio toroanus* Cabrera (isotype, Cuezco & Balegno 2001, LP). —B. *Senecio saucensis* Cabrera (holotype, Parodi 14836, LP).

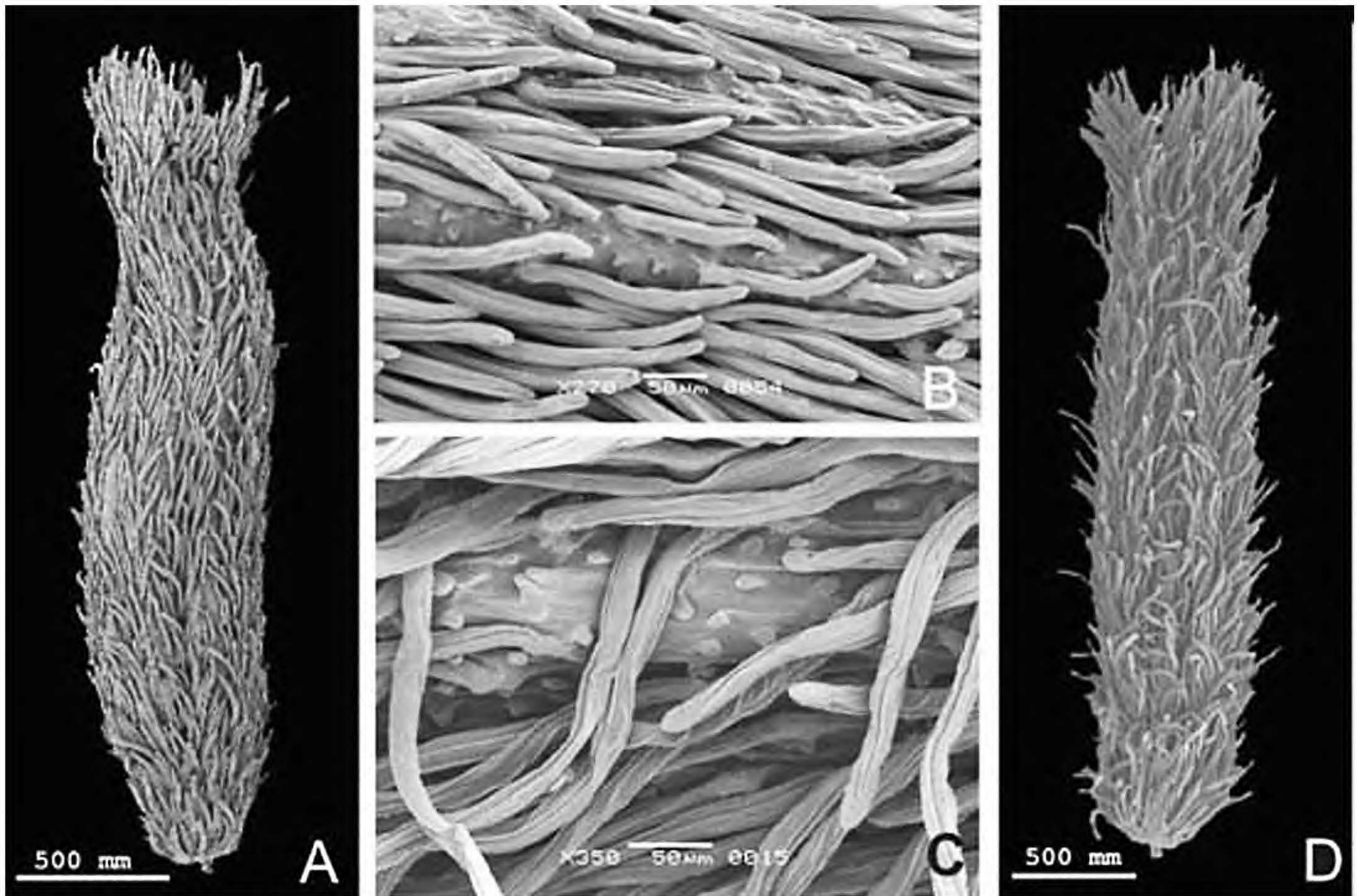


Figure 2. SEM fruit micromorphology. A, B. *Senecio saucensis*. —A. Pubescent cypsela (Argentina, Prov. Catamarca, Tinogasta, *F. A. Roig 15427*, SI). —B. Ornamentation of pubescent cypselar surface with papillae also evident (Argentina, Prov. La Rioja, Dept. Capital, Dique Los Sauces, *A. Burkart 12627*, LP). C, D. *Senecio toroanus* (Argentina, Prov. Mendoza, Dept. Las Heras, Quebrada del Toro, *G. Covas 18570*, SI). —C. Pubescent cypsela. —D. Surface ornamentation.

consequence of this taxonomic synonymy, the geographic distribution of *S. toroanus* is extended, with its distributional range in the Argentine mountains of Catamarca, La Rioja, San Juan, and Mendoza provinces, between 2000 and 2700 m in altitude.

Senecio toroanus Cabrera, *Darwiniana* 10(4): 573, fig. 11. 1954. TYPE: Argentina. Mendoza: Dept. Las Heras, Quebrada del Toro, El Centinela, 2000 m, 21 Jan. 1950, *A. Cuezso & B. Balegno 2001* (holotype, LIL not seen; isotype, LP). Figure 1A.

Senecio saucensis Cabrera, *Bol. Soc. Argent. Bot.* 11(1): 53, fig. 5. 1966, syn. nov. TYPE: Argentina. La Rioja: Dept. Capital, Dique Los Sauces, 16 Feb. 1944, *L. Parodi 14836* (holotype, LP). Figure 1B.

Acknowledgments. The authors thank Rafael Urréjola for the SEM photographs, graphic designer Marcelo Girardi, and the curators of LP and SI for their technical assistance. We are grateful to Debra Trock and an anonymous reviewer for comments that improved the manuscript. C.C.X. acknowledges personal support from CIC-PBA.

Literature Cited

- Barkley, T. M. 1985. Infrageneric groups in *Senecio* s.l. and *Cacalia* s.l. (Asteraceae: Senecioneae) in Mexico and Central America. *Brittonia* 37(2): 211–218.
- . 2006. *Senecio*. Pp. 540–567 in *Flora of North America* Editorial Committee (editors), *Flora of North America North of Mexico*, Vol. 20. Oxford University Press, New York.
- Cabrera, A. L. 1939. Las especies tucumanas del género *Senecio* (Compositae). *Lilloa* 5: 65–120.
- . 1949. El género *Senecio* en Chile. *Lilloa* 15: 27–501.
- . 1985. El género *Senecio* (Compositae) en Bolivia. *Darwiniana* 26: 79–217.
- , S. E. Freire & L. Ariza Espinar. 1999. *Senecio* Tribu VIII. Senecioneae. Pp. 12–158 in A. T. Hunziker (editor), *Flora Fanerogámica Argentina*, Vol. 62. Museo Botánico de Córdoba, Córdoba.
- Candolle, A. P. de. 1838. *Prodromus Systematis Naturalis Regni Vegetabilis*, Vol 6. Truettel and Würtz, Paris.
- Gray, A. 1862. Enumeration of the plants. *Amer. J. Sci. Arts*, ser. 2 33(98): 240.
- Greenman, J. M. 1902. Monographie der nord- und centralamerikanischen Arten der Gattung *Senecio*. *Bot. Jahrb. Syst.* 32: 1–33.
- . 1915. Monograph of the North and Central American species of the genus *Senecio*, part II. *Ann. Missouri Bot. Gard.* 2: 573–626.

- Jeffrey, C. 1988. The tribe Senecioneae (Compositae) in the Mascarene Islands with an annotated world check-list of the genera of the tribe. Notes on Compositae: VI. Kew Bull. 47: 49–109.
- López, M. G. 2005. Estudios morfológicos, citotaxonómicos y anatómicos en *Senecio* sect. *Senecio* serie *Hualtatini*. Bol. Soc. Argent. Bot. 40(suppl.): 69.
- . 2008. Estudios Citogenéticos, Evolutivos y Biosistemáticos en *Senecio* sect. *Senecio* serie *Corymbosi*, de Argentina. PhD Thesis, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires.
- , A. F. Wulff, L. Poggio & C. C. Xifreda. 2005. Chromosome numbers and meiotic studies in species of *Senecio* (Asteraceae) from Argentina. Bot. J. Linn. Soc. 148: 465–474.
- , ———, ——— & ———. 2008. South African fireweed *Senecio madagascariensis* (Asteraceae) in Argentina: Relevance of chromosome studies to its systematics. Bot. J. Linn. Soc. 158: 613–620.
- McNeill, J., F. R. Barrie, H. M. Burdet, V. Demoulin, D. L. Hawksworth, K. Marhold, D. H. Nicolson, J. Prado, P. C. Silva, J. E. Skog, J. H. Wiersema & N. J. Turland (editors). 2006. International Code of Botanical Nomenclature (Vienna Code). Regnum Veg. 146.
- Ornduff, R., T. Mosquin, D. W. Kyhos & P. H. Raven. 1967. Chromosome numbers in Compositae VI, Senecioneae II. Amer. J. Bot. 54: 205–213.